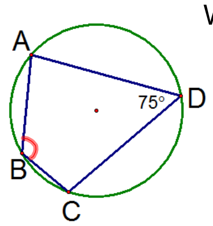
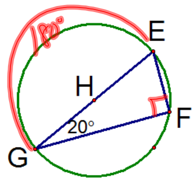


Warmup!

$m\overset{\frown}{AC}$ = 150°

$m\angle B$ = 105°

180 − 75

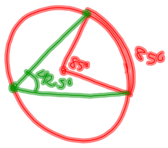


$\overline{GE}$ is the diameter.

$m\angle E$ = 70°

Also, complete the survey in google classroom.

10-5 Apply Other Angle Relationships in Circles

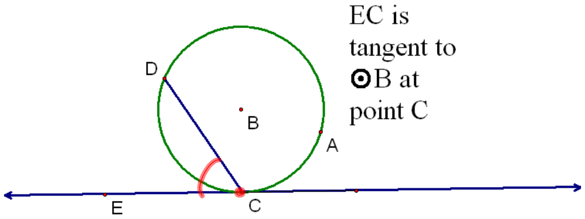


inscribed

Theorem 10.11--If a tangent and a chord intersect at a point on a circle, then the measure of each angle formed is one half the measure of its intercepted arc.

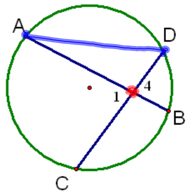
$m\angle DCE = \frac{1}{2} m\overset{\frown}{DC}$

$\overleftrightarrow{EC}$ is tangent to ⊙B at point C



Given: picture

Prove: $m\angle 4 = \frac{1}{2}(m\overset{\frown}{AC} + m\overset{\frown}{DB})$



$m\angle 4 = m\angle A + m\angle D$

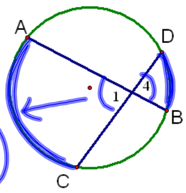
$\frac{1}{2} m\overset{\frown}{DB} + \frac{1}{2} m\overset{\frown}{AC}$

$\frac{1}{2}(m\overset{\frown}{DB} + m\overset{\frown}{AC})$

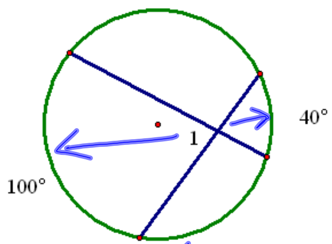
Theorem 10-12--Angles Inside the Circle Theorem--The measure of an angle formed on the inside of a circle (by 2 secants or 2 chords) is half the sum of the measures of the intercepted arcs.

Inside = $\frac{1}{2}$(sum of arcs)

$m\angle 4 = \frac{1}{2}(m\overset{\frown}{AC} + m\overset{\frown}{DB})$



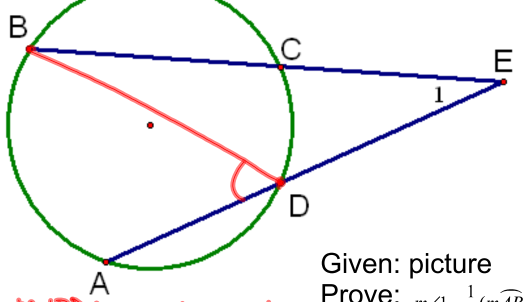
Find the measure of the angle.



$m\angle 1 = \frac{1}{2}(100 + 40)$

$m\angle 1 = 70°$

gsp



$m\angle BDA = m\angle B + m\angle 1$

$m\angle BDA - m\angle B = m\angle 1$

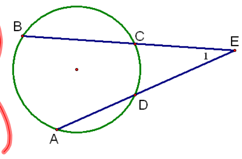
Given: picture

Prove: $m\angle 1 = \frac{1}{2}(m\widehat{AB} - m\widehat{DC})$

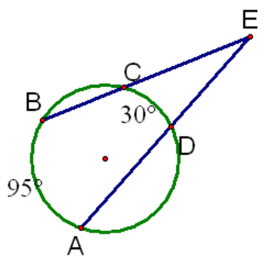
Theorem 10-13--<u>Angles Outside the Circle Theorem</u>--The measure of an angle formed on the outside of a circle (by 2 secants, 2 tangents, or secant and a tangent) is half the difference of the measures of the intercepted arcs.

Outside $= \frac{1}{2}$(difference of arcs)

$m\angle 1 = \frac{1}{2}(m\widehat{AB} - m\widehat{CD})$

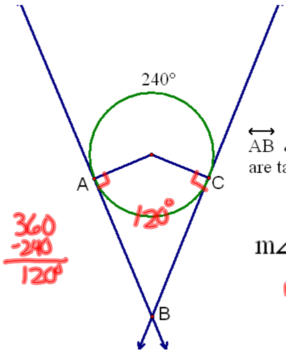


gsp



$m\angle E = \frac{1}{2}(95 - 30)$

$32.5°$



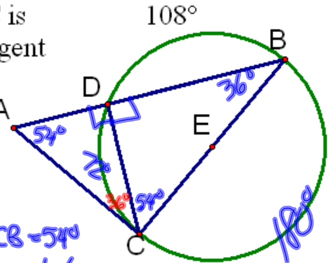
$\begin{array}{r} 360 \\ -240 \\ \hline 120 \end{array}$

$\overleftrightarrow{AB}$ & $\overleftrightarrow{BC}$ are tangents

$m\angle B = \frac{1}{2}(240 - 120)$

$m\angle B = 60°$

$\overline{AC}$ is tangent

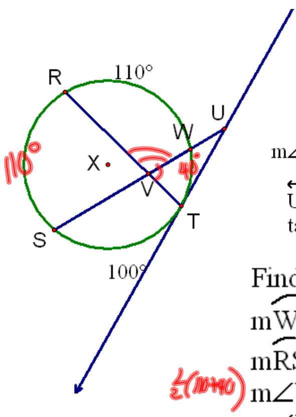


$m\angle DCB = 54°$

$m\angle A = \frac{1}{2}(180 - 72)$

108

54°



$m\angle WUT = 30°$

$\overleftrightarrow{UT}$ IS tangent

Find

$m\widehat{WT} = 40°$

$m\widehat{RS} = 110°$

$\frac{1}{2}(110+40)$ $m\angle WVT = 75°$

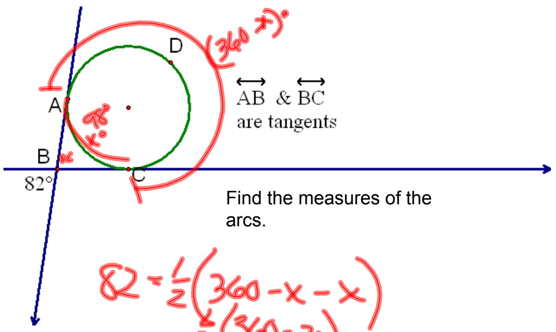
$m\angle RVW = 105°$

$30 = \frac{1}{2}(100 - m\widehat{WT})$

$60 = 100 - m\widehat{WT}$

$-40 = -m\widehat{WT}$

$40 = m\widehat{WT}$



Find the measures of the arcs.

$82 = \frac{1}{2}(360 - x - x)$

$\frac{1}{2}(360 - 2x)$

$82 = 180 - x$

$-98 = -x$

$98 = x$

HW
p683-685
#s 3-11, 16a, 17, 18, 20, 21

10_6_gsp_example.gsp